Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V (DRAFT PERMIT) NO. V-04-038
EAST KENTUCKY POWER COOPERATIVE, INC.
WILLIAM C. DALE STATION
FORD, KY
FEBRUARY 15, 2005
SHANAKA C. EWING, REVIEWER
SOURCE I.D. #: 21-049-00003
SOURCE A.I. #: 809
ACTIVITY ID #: APE20040001

SOURCE DESCRIPTION:

An application for a renewal to the Title V Permit, V-97-053, for the East KY Power Cooperative/William C. Dale Generating Station was received on May 3, 2004. A nitrogen oxides (NO_x) budget permit application was received on September 18, 2003. The new Title V permit will include a renewal of the Phase II Acid Rain Permit and the NO_x Budget Permit.

The source is an electric power generating station consisting of four (4) pulverized coal-fired boilers. The boilers have an input capacity of 255.9 mmBtu/hr each for Unit 1 & 2, 796.3 mmBtu/hr and 756 mmBtu/hr for Units 3 & 4, respectively. All units are wall-fired, and are equipped with electrostatic precipitators (ESPs). Units 3 & 4 are equipped with low nitrogen oxide burners, in addition to ESPs.

The facility is classified as a Title V major source of air pollution based on the potential to emit more than 100 tons per year (tpy) of particulate matter less than 10 microns (PM_{10}), carbon monoxide (CO), nitrogen oxides (NO_x), and sulfur dioxide (SO_2).

There are no significant modifications to the facility for the Title V renewal.

The following is a list of significant emission units.

E. Point 001 Unit 01, 225.9 mmBtu/hr pulverized coal-fired, dry bottom, wall-fired indirect heat exchanger equipped with electrostatic precipitator (installed 1978); construction commenced 1954.

E. Point 002 Unit 02, 225.9 mmBtu/hr pulverized coal-fired, dry bottom, wall-fired indirect heat exchanger equipped with electrostatic precipitator (installed 1978); construction commenced 1954.

E. Point 003 Unit 03, 796.3 mmBtu/hr pulverized coal-fired, dry bottom, wall-fired indirect heat exchanger equipped with electrostatic precipitator (installed 1972) and low nitrogen dioxide burners (installed 1996); construction commenced 1957.

E. Point 004 Unit 04, 756 mmBtu/hr pulverized coal-fired, dry bottom, wall-fired indirect heat exchanger equipped with electrostatic precipitator (installed 1972) and low nitrogen dioxide burners (installed 1996); construction commenced 1960.

E. Point 005 Unit 05, Coal handling operations include: two (2) coal receiving hoppers and one (1) reclaim hopper using water/chemical additives for dust suppression; seven (7) coal transfer and conveying points which are equipped with enclosures or constructed underground; and coal crushing operation using water/chemical additives for dust suppression; construction commenced 1969.

E. Point 006 Unit 05, Paved/Unpaved haul road and coal stockpile using water/chemical additives for dust suppression; construction commenced 1969.

COMMENTS:

E. Point 001 Coal-Fired Indirect Heat Exchanger, 255.9 mmBtu/hr
E. Point 002 Coal-Fired Indirect Heat Exchanger, 255.9 mmBtu/hr

The two (2) units are Foster-Wheeler coal-fired boilers and were installed in 1954. Each unit has a maximum fuel input capacity of 255.9 million British thermal units per hour (mmBtu/hr). The primary fuel burned for each unit is coal, and the secondary fuel is No. 2 fuel oil.

The following regulations are applicable to the units:

401 KAR 61:015 Existing indirect heat exchangers, applicable to an emission unit with a capacity of more than 250 mmBtu/hr and commenced before August 17, 1971.

40 CFR 52, Subpart S Revised SO_2 emission limit for large coal-fired boilers in Bell, Clark, and Woodford Counties submitted on June 29, 1979, which was disapproved since it did not provide for attainment and maintenance of the NAAQS. The limit approved by the EPA on May 10, 1976 is the applicable limit for these sources.

No modifications have been made to units 01 & 02 since the original Title V permit, V-97-053. The SO_2 emission limit, approved by EPA on May 10, 1976, is 1.8 lbs of SO_2 per mmBtu for solid fuel. The limit submitted for SO2 for large coal-fired boilers on June 29, 1979 was disapproved for Clark County due to the possible violation of the national ambient air quality standard (NAAQS) in this area. No other limit has been approved for this county at this time; therefore, a limit of 1.8 lb/mmBtu will remain in effect. Emissions for sulfur dioxide allowable standard are based on AP-42 emission factors, the percent by weight of sulfur in the fuel, based on certification from the fuel supplier, and heating value of fuel, as determined from analysis of the fuel. Compliance with the sulfur dioxide allowable standard shall be determined from the continuous emission monitors (CEMs).

Pursuant to 401 KAR 61:015 Section 4(1), the units shall have emissions of particulate matter (PM) <= 0.217 lb/mmBtu actual heat input. Emissions for the particulate matter allowable standard is based on AP-42 emission factors, and the heating value of fuel, as determined from analysis of the fuel. Compliance with the particulate matter allowable standard shall be determined from the continuous opacity monitors (COMs). The permittee may assure continuing compliance with the particulate emission standard by operating the affected facility and associated control equipment such that the opacity does not exceed the upper limit of the indicator range developed from COM

data collected during stack tests.

Pursuant to 401 KAR 61:015 Section 4(3), the units shall have visible emissions <= 40 % opacity, based on a six-minute-average, except that a maximum of sixty (60) percent opacity is allowed for a period or aggregate of periods not more than six minutes in any sixty minutes during building a new fire, cleaning the fire-box, or blowing soot. For compliance with the opacity limit, when the unit is in operation, the permittee shall read, weather permitting, the opacity of emissions from each stack using Reference Method 9 once per daylight shift.

E. Point 003 Coal-Fired Indirect Heat Exchanger, 796.3 mmBtu/hr
E. Point 004 Coal-Fired Indirect Heat Exchanger, 756 mmBtu/hr

The two (2) units are Foster-Wheeler coal-fired boilers and where installed in 1954 and 1960. Unit 03 and 04 have a maximum fuel input capacity of 796.3 & 756 million British thermal units per hour (mmBtu/hr), respectively. The primary fuel burned for each unit is coal, and the secondary fuel is No. 2 fuel oil.

The following regulations are applicable to the units:

401 KAR 52:060	Acid rain permits;
401 KAR 51:160	NO_x requirements for large utility and industrial boilers;
401 KAR 61:015	Existing indirect heat exchangers, applicable to an emission unit with a capacity of more than 250 mmBtu/hr and commenced before August 17, 1971;
Regulation No. 7	Kentucky Air Pollution Control Commission Prevention and Control of Emissions of Particulate Matter from Combustion of Fuel in Indirect Heat Exchangers;
40 CFR 52, Subpart S	Revised SO_2 emission limit for large coal-fired boilers in Bell, Clark, and Woodford Counties submitted on June 29, 1979, which was disapproved since it did not provide for attainment and maintenance of the NAAQS. The limit approved by the EPA on May 10, 1976 is the applicable limit for these sources; and
40 CFR, Part 64	Compliance Assurance Monitoring (for PM)

Point 03 has 1,983 Phase II allowance allocations set by 40 CFR Part 73.
Point 04 has 1,847 Phase II allowance allocations set by 40 CFR Part 73.

401 KAR 52:060, Acid rain permits, applies to Emission Units 03 and 04 for the prevention, abatement, and control of air pollution and incorporates by reference the federal acid rain provisions as codified in 40 CFR Parts 72 to 78. The NOx limit and the averaging plans are set by 40 CFR 75 and 76. The unit does have a SO_2 allowances as listed in 40 CFR, Part 73.10 for each year from 2000 to year 2009.

401 KAR 51:160, NO_x requirements for large utility and industrial boilers, and 40 CFR 97, Subpart C, apply to Emission Unit 03 and 04. The NO_x Budget Permit application for this unit was submitted to the Division, and received on September 18, 2003. Requirements contained in that application were incorporated into and made part of the NO_x Budget Permit. Pursuant to 401 KAR 52:020, Section 3, the source shall operate in compliance with those requirements.

No modifications have been made to units 03 & 04 since the original Title V permit, V-97-053. The SO_2 emission limit, approved by EPA on May 10, 1976, is 1.8 lbs of SO_2 per mmBtu for solid fuel. The limit submitted for SO2 for large coal-fired boilers on June 29, 1979 was disapproved for Clark County due to the possible violation of the national ambient air quality standard (NAAQS) in this area. No other limit has been approved for this county at this time; therefore, a limit of 1.8 lb/mmBtu will remain in effect. Emissions for sulfur dioxide allowable standard is based on AP-42 emission factors, the percent by weight of sulfur in the fuel, based on certification from the fuel supplier, and heating value of fuel, as determined from analysis of the fuel at least once per week. Compliance with the sulfur dioxide allowable standard shall be determined from the continuous emission monitors (CEMs).

Pursuant to 401 KAR 61:015 Section 4(4) and Regulation No. 7, the units shall have emissions of particulate matter (PM) <= 0.316 lb/mmBtu actual heat input. Emissions for the particulate matter allowable standard is based on AP-42 emission factors, and the heating value of fuel, as determined from analysis of the fuel. Compliance with the particulate matter allowable standard shall be determined from the continuous opacity monitors (COMs). The permittee may assure continuing compliance with the particulate emission standard by operating the affected facility and associated control equipment such that the opacity does not exceed the upper limit of the indicator range developed from COM data

Pursuant to 401 KAR 61:015 Section 4(4) and Regulation No. 7, the units shall have visible emissions <= 40 % opacity, based on a six-minute-average, except that a maximum of sixty (60) percent opacity is allowed for a period or aggregate of periods not more than six minutes in any sixty minutes during building a new fire, cleaning the fire-box, or blowing soot. For compliance with the opacity limit, when the unit is in operation, the permittee shall read, weather permitting, the opacity of emissions from each stack using Reference Method 9 once per daylight shift.

E. Point 001 Coal-Fired Indirect Heat Exchanger, 255.9 mmBtu/hr
E. Point 002 Coal-Fired Indirect Heat Exchanger, 255.9 mmBtu/hr
E. Point 003 Coal-Fired Indirect Heat Exchanger, 796.3 mmBtu/hr
E. Point 004 Coal-Fired Indirect Heat Exchanger, 756 mmBtu/hr

For units 01 through 04, the permittee shall monitor and record the following: 1) sulfur content of solid fuels, as burned, based on certification from the fuel supplier; 2) the rate of each fuel burned; 3) the heating value and ash content of fuels; 4) the average electrical output; and 5) the minimum and maximum hourly generation rate.

Per 401 KAR 61:015 and Regulation No. 7, maximum emission of PT shall not exceed 0.316 lb/mmBtu. The permittee may assure continuing compliance with the particulate emission standard by operating the affected facility and associated control equipment such that the opacity does not

exceed the upper limit of the indicator range developed from COM data collected during stack tests. If five (5) percent of COM data (based on a three-hour rolling average) recorded in a calendar quarter show excursions from the indicator range, the permittee shall contact the Division within thirty (30) days after the end of the quarter to schedule a stack test to demonstrate compliance with the particulate standard while operating at the conditions which resulted in the excursions. The Division may waive this testing requirement upon a demonstration that the cause of the excursions has been corrected, or may require stack tests at any time pursuant to Regulation 401 KAR 50:045, Performance tests.

401 KAR 61:015, *Existing Indirect Heat Exchangers*, applies to the operating and emission limitations for sulfur dioxide (SO_2). Emission of SO_2 shall not exceed 1.8 lb/mmBtu. Compliance will be shown by the calculation of emission, based on the AP-42 emission factor, from the following formula: Sulfur dioxide = [(38 x percent sulfur in coal lb/ton from each weekly composite sample of coal received) divided by (coal heating value from each weekly composite sample of coal received in mmBtu/ton)].

The permittee shall monitor and record the heating value, ash and sulfur content of coal by performing an analysis each week on a composite sample of coal received. The permittee shall monitor and record the amount of fuel combusted on a monthly basis.

EPA Reference Method 9 shall be performed whenever EPA Reference Method 5 testing is performed. All results shall be documented. In addition, COM data shall also be documented during the same testing time interval.

EPA Reference Method 5 or equivalent shall be performed within 1 year from issuance of this permit to determine the amount of PM emissions per ton of coal processed. The heating value of coal used during the test shall be specifically tested and documented. The opacity shall be recorded from the COM and from Reference Method 9 readings during the stack tests and reported with the test results. The amount of coal combusted (tons), the heating value of coal from a coal analysis (mmBtu/ton), and the calculated emission factor (lbs of PT/mmBtu) shall be documented and reported with the test results. If no additional stack tests are performed, excluding the test performed within 1 year from issuance of this permit, the permittee shall conduct one performance test for particulate emissions within the third year of the term of this permit to demonstrate compliance with the allowable standard.

E. Point 005 Coal Handling Equipment
E. Point 006 Paved/Unpaved Haul Roads & Coal Stockpile

The following regulation is applicable to the unit(s):

401 KAR 63:010 Fugitive Emissions
Pursuant to 401 KAR 63:010 Section 3, no person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate. In addition, reasonable precautions shall be taken to prevent particulate matter from becoming airborne. The precautions shall include, but not be limited to, with wet suppression and/or enclosures so as to comply with the standards specified in Section 3 of 401 KAR 63:010, Fugitive emissions. Compliance is demonstrated when daily observations indicate no visible fugitive dust emissions

extending beyond the property line and that the processes and controls are operating normally. Observations and records, if applicable, shall be utilized to document compliance.

The permittee shall monitor the amount of coal received and processed through each piece of conveying or handling equipment, including stockpiles, on a monthly basis. Visible emissions from each piece of equipment or operation described for this item or group shall be monitored daily during daylight hours to determine whether conditions appear to be normal or abnormal. If the emissions appear to be abnormal, the permittee must then comply with the deviation reporting. The permittee shall maintain records of the amount of coal received and processed through each piece of conveying or handling equipment, including stockpiles, on a monthly basis.

OPERATIONAL FLEXIBILITY: N/A

EMISSION AND OPERATING CAPS DESCRIPTION:
None

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.

PAST PERMIT SUMMARY:

Permit type	Log #	Complete Date	Issuance Date	Summary of Action
V-97-053 Title V	**50097**	**2/11/1997**	**11/4/1999**	**Initial Title V w/Acid Rain**
A-98-013 Acid Rain Permit	**50097**	**2/08/1998**	**6/01/1999**	**Acid Rain Permit**
V-04-038 Title Renewal w/ Acid Rain, NOx Budget	**56539**	**9/24/05**		**Title V Renewal w/ Acid Rain & NOx Budget Permits**

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